

A. AMENDMENTS TO CLAIMS

Please amend the claims as indicated hereinafter.

1. (CURRENTLY AMENDED) A method for measuring client-side performance, the method comprising:

an application program executing on a server device processing a request from a client process executing on a client device and generating an item in response thereto that is to be sent to the client process;

~~intercepting the an-item generated by the an-application program-executing on a server device that is to be sent over a network to a client process executing on a client device, wherein the intercepting is performed prior to arrival of the item at the client process;~~

determining a percentage of total items sent to the client process that are to be modified; determining, based upon the percentage of total items sent to the client process that are to be modified, whether the intercepted item is to be modified; and if, based upon the percentage of total items sent to the client process that are to be modified, the intercepted item is to be modified, then modifying the intercepted item transparently with respect to the application program to produce a modified item that includes code which, when processed by one or more processors at the client device causes:

at the client device, measuring performance related to a service associated with the item, and

at the client device, performing one or more acts based on a measurement resulting from said step of measuring performance, wherein the one or more acts includes sending data indicating the measurement to an entity over the network; and

sending the modified item over the network to the client process executing on the client device.
2. (CANCELED)

3. (PREVIOUSLY PRESENTED) The method of Claim 1, wherein said steps of measuring performance and performing one or more acts based on the measurement are performed transparently with respect to a user of the client process.
4. (CANCELED)
5. (PREVIOUSLY PRESENTED) The method of Claim 1, wherein said step of sending the data to an entity further comprises storing the data in a data structure that is automatically sent to the server device associated with said service in response to a later request from the client process for said service.
6. (ORIGINAL) The method of Claim 5, wherein:
the client process is a web browser; and
the data structure is a cookie stored on the client device by the web browser.
7. (PREVIOUSLY PRESENTED) The method of Claim 1, wherein:
the step of modifying the item includes adding code to the item which, when processed by the one or more processors at the client device, causes the client process to issue a request to the server device over the network; and
said step of sending data indicating the measurement to an entity further comprises sending the request including the data indicating the measurement to the server device over the network.
8. (ORIGINAL) The method of Claim 7, wherein the request is for a particular file and in response to the request for the particular file no change is made by the client process to a page already rendered on a display of the client device.
9. (PREVIOUSLY PRESENTED) The method of Claim 1, further comprising storing the data indicating the measurement in a log file on the server device.

10. (PREVIOUSLY PRESENTED) The method of Claim 1, further comprising storing the data indicating the measurement in a database of the entity on the network.
11. (PREVIOUSLY PRESENTED) The method of Claim 1, further comprising: the server device receiving over the network the data indicating the measurement; and performing one or more acts at the server device based on the data indicating the measurement.
12. (PREVIOUSLY PRESENTED) The method of Claim 11, wherein said step of performing one or more acts at the server device based on the data indicating the measurement further comprises:
determining whether the data indicating the measurement indicates performance has fallen below a threshold; and
if the data indicating the measurement indicates performance has fallen below the threshold, then sending a notification message.
13. (PREVIOUSLY PRESENTED) The method of Claim 1, wherein said step of at the client device performing one or more acts based on the measurement further comprises:
determining whether the measurement indicates performance has fallen below a threshold; and
if the measurement indicates performance has fallen below the threshold, then sending a notification message.
14. (ORIGINAL) The method of Claim 13, said step of sending a notification message comprising sending the notification message to an administrator for a server device associated with said service.
15. (ORIGINAL) The method of Claim 13, said step of sending a notification message comprising sending the notification message to a user of the client process.

16. (ORIGINAL) The method of Claim 1, wherein the measurement is a client response time between a first time when a user of the client process selects an item on a first web page rendered on a display of the client device and a second time when a second web page is fully rendered on the display of the client device.
17. (PREVIOUSLY PRESENTED) The method of Claim 1, wherein:
processing of the code by the one or more processors at the client device
collecting ancillary information relating to one or more components of the client process that participate in obtaining the service from the application program; and
the at the client device performing one or more acts based on the measurement includes correlating the measurement with the ancillary information.
18. (PREVIOUSLY PRESENTED) The method of Claim 1, after said step of intercepting the item and before said step of modifying the item, further comprising the steps of:
determining a type associated with the item; and
determining whether to perform said step of modifying the item based on the type of the item.
19. (PREVIOUSLY PRESENTED) The method of Claim 1, after said step of intercepting the item and before said step of modifying the item, further comprising the steps of:
determining a unique reference associated with the item; and
determining whether to perform said step of modifying the item based on whether the unique reference matches a particular reference.
20. (CANCELED)
21. (ORIGINAL) The method of Claim 1, wherein:

the item to be sent to the client process is stored in a cache before the item is sent to the client process;
said step of intercepting the item comprises accessing the item in the cache;
and
said step of sending the modified item to the client process comprises replacing the item in the cache with the modified item.

22. (PREVIOUSLY PRESENTED) The method of Claim 21, wherein the cache is on the server device.
23. (ORIGINAL) The method of Claim 21, wherein the cache is on a proxy server for the client process.
24. (ORIGINAL) The method of Claim 1, wherein:
the item includes hypertext markup language (HTML) statements; and
the client process is a web browser.
25. (ORIGINAL) The method of Claim 24, wherein:
the web browser is configured to run javascript; and
the code comprises javascript statements.
26. (ORIGINAL) The method of Claim 1, wherein the code conforms to a scripting language.
27. (ORIGINAL) The method of Claim 1, wherein the code comprises a Java applet.
28. (ORIGINAL) The method of Claim 1, wherein the code comprises an ActiveX module.
29. (ORIGINAL) The method of Claim 1, said step of modifying the item further comprising appending the code to the end of the item.
30. (ORIGINAL) The method of Claim 1, wherein:
the item includes markup language statements; and

said step of modifying the item further comprises inserting the code at a particular statement of the markup language statements.

31. (ORIGINAL) The method of Claim 1, wherein:
the code includes at least one of first code added to a first item and second code added to a second item; and
said measuring performance comprises starting a time measurement based on the first code and ending a time measurement based on the second code.
32. (ORIGINAL) The method of Claim 31, wherein:
the first code is executed in response to a user of the client process clicking on a control included in the first item; and
the second code is executed in response to fully loading the second item.
33. (ORIGINAL) The method of Claim 1, wherein the code includes first code executed upon arrival of the first code at the client process and second code executed in response to a data structure generated by the client process after arrival of the first code.
34. (ORIGINAL) The method of Claim 33, wherein the data structure describes an event at the client device.
35. (ORIGINAL) The method of Claim 34, wherein the event is a message received from an operating system executing on the client device.
36. (ORIGINAL) The method of Claim 34, wherein the event is a manipulation of a control of the client device by a user.
37. (PREVIOUSLY PRESENTED) The method of Claim 33, wherein processing of the second code causes the measuring performance.
38. (PREVIOUSLY PRESENTED) The method of Claim 33, wherein processing of the second code causes recording a current time.

39. (PREVIOUSLY PRESENTED) The method of Claim 33, wherein:
the item to be sent to the client process includes third code to be executed in
response to the data structure generated by the client process; and
processing the first code causes replacing the third code with the second
code.
40. (ORIGINAL) The method of Claim 1, wherein the code includes first code
executed in response to a data structure describing a first event generated by
the client process and second code executed in response to a data structure
describing a second event generated by the client process.
41. (PREVIOUSLY PRESENTED) The method of Claim 40, wherein:
the item to be sent to the client process includes third code to be executed in
response to the data structure describing the second event by the
client process; and
processing of the first code causes replacing the third code with the second
code.
42. (CURRENTLY AMENDED) A computer-readable storage medium carrying instructions
for measuring client-side performance, wherein execution of the instructions by one or
more processors causes:
an application program executing on a server device processing a request from a client
process executing on a client device and generating an item in response thereto
that is to be sent to the client process;
intercepting ~~the an-item generated by the an-application program-executing on a server~~
~~device that is to be sent over a network to a client process executing on a client~~
~~device, wherein the intercepting is performed prior to arrival of the item at the~~
~~client process;~~
determining a percentage of total items sent to the client process that are to be modified;
determining, based upon the percentage of total items sent to the client process that are to
be modified, whether the intercepted item is to be modified; and

if, based upon the percentage of total items sent to the client process that are to be modified, the intercepted item is to be modified, then modifying the intercepted item transparently with respect to the application program to produce a modified item that includes code which, when processed by one or more processors at the client device causes: at the client device, measuring performance related to a service associated with the item, and at the client device, performing one or more acts based on a measurement resulting from said step of measuring performance, wherein the one or more acts includes sending data indicating the measurement to an entity over the network; and sending the modified item over the network to the client process executing on the client device.

43. (CANCELED)
44. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 42, wherein said steps of measuring performance and performing one or more acts based on the measurement are performed transparently with respect to a user of the client process.
45. (CANCELED)
46. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 42, wherein said step of sending the data to an entity further comprises storing the data in a data structure that is automatically sent to a the server device associated with said service in response to a later request from the client process for said service.
47. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 46, wherein:
the client process is a web browser; and
the data structure is a cookie stored on the client device by the web browser.

48. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 42, wherein:
the step of modifying the item includes adding code to the item which, when processed by the one or more processors at the client device, causes the client process to issue a request to the server device over the network; and
said step of sending data indicating the measurement to an entity further comprises sending the request including the data indicating the measurement to the server device over the network.

49. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 48, wherein the request is for a particular file and in response to the request for the particular file no change is made by the client process to a page already rendered on a display of the client device.

50. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 42, wherein execution of the one or more sequences of instructions by the one or more processors further causes the one or more processors to perform the step of storing the data indicating the measurement in a log file on a server device.

51. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 42, wherein execution of the one or more sequences of instructions by the one or more processors further causes the one or more processors to perform the step of storing the data indicating the measurement in a database of the entity on the network.

52. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 42, wherein execution of the one or more sequences of instructions by the one or more processors further causes:
the server device receiving over the network the data indicating the measurement; and
performing one or more acts at the server device based on the data indicating the measurement.

53. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 52, wherein said step of performing one or more acts at the server device based on the data indicating the measurement further comprises: determining whether the data indicating the measurement indicates performance has fallen below a threshold; and if the data indicating the measurement indicates performance has fallen below the threshold, then sending a notification message.

54. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 42, wherein said step of performing one or more acts based on the measurement further comprises: determining whether the measurement indicates performance has fallen below a threshold; and if the measurement indicates performance has fallen below the threshold, then sending a notification message.

55. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 54, said step of sending a notification message comprising sending the notification message to an administrator for a server device associated with said service.

56. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 54, said step of sending a notification message comprising sending the notification message to a user of the client process.

57. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 42, wherein the measurement is a client response time between a first time when a user of the client process selects an item on a first web page rendered on a display of the client device and a second time when a second web page is fully rendered on the display of the client device.

58. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 42, wherein:

processing of the code by the one or more processors at the client device causes collecting ancillary information relating to one or more components of the client process that participate in obtaining the service from the application program; and

the at the client device performing one or more acts based on the measurement includes correlating the measurement with the ancillary information.

59. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 42, wherein execution of the one or more sequences of instructions by the one or more processors further causes the one or more processors, after said step of intercepting the item and before said step of modifying the item, to perform the steps of:
determining a type associated with the item; and
determining whether to perform said step of modifying the item based on the type of the item.

60. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 42, wherein execution of the one or more sequences of instructions by the one or more processors further causes the one or more processors, after said step of intercepting the item and before said step of modifying the item, to perform the steps of:
determining a unique reference associated with the item; and
determining whether to perform said step of modifying the item based on whether the unique reference matches a particular reference.

61. (CANCELED)

62. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 42, wherein:
the item to be sent to the client process is stored in a cache before the item is sent to the client process;

said step of intercepting the item comprises accessing the item in the cache;

and

said step of sending the modified item to the client process comprises

replacing the item in the cache with the modified item.

63. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 62, wherein the cache is on the server device.
64. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 62, wherein the cache is on a proxy server for the client process.
65. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 42, wherein:
the item includes hypertext markup language (HTML) statements; and
the client process is a web browser.
66. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 65, wherein:
the web browser is configured to run javascript; and
the code comprises javascript statements.
67. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 42, wherein the code conforms to a scripting language.
68. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 42, wherein the code comprises a Java applet.
69. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 42, wherein the code comprises an ActiveX module.
70. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 42, said step of modifying the item further comprising appending the code to the end of the item.

71. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 42, wherein:
the item includes markup language statements; and
said step of modifying the item further comprises inserting the code at a particular statement of the markup language statements.
72. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 42, wherein:
the code includes at least one of first code added to a first item and second code added to a second item; and
said measuring performance comprises starting a time measurement based on the first code and ending a time measurement based on the second code.
73. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 72, wherein:
the first code is executed in response to a user of the client process clicking on a control included in the first item; and
the second code is executed in response to fully loading the second item.
74. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 42, wherein the code includes first code executed upon arrival of the first code at the client process and second code executed in response to a data structure generated by the client process after arrival of the first code.
75. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 74, wherein the data structure describes an event at the client device.
76. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 75, wherein the event is a message received from an operating system executing on the client device.

77. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 75, wherein the event is a manipulation of a control of the client device by a user.
78. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 74, wherein processing of the second code causes the measuring performance.
79. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 74, wherein processing of the second code causes recording a current time.
80. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 74, wherein:
the item to be sent to the client process includes third code to be executed in response to the data structure generated by the client process; and
processing the first code causes replacing the third code with the second code.
81. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 42, wherein the code includes first code executed in response to a data structure describing a first event generated by the client process and second code executed in response to a data structure describing a second event generated by the client process.
82. (PREVIOUSLY PRESENTED) The computer-readable storage medium of Claim 81, wherein:
the item to be sent to the client process includes third code to be executed in response to the data structure describing the second event by the client process; and
processing of the first code causes replacing the third code with the second code.

83. (CURRENTLY AMENDED) A method for responding to client-side performance on a network connecting a client device executing a client process to a server device configured to execute an application program to provide a service, the method comprising the steps of:

the application program processing a request from a client process and generating an item in response thereto that is to be sent to the client process;

intercepting the an-item produced by the application program prior to arrival of the item at the client process;

determining a percentage of total items sent to the client process that are to be modified; determining, based upon the percentage of total items sent to the client process that are to be modified, whether the intercepted item is to be modified; and

if, based upon the percentage of total items sent to the client process that are to be modified, the intercepted item is to be modified, then

modifying the intercepted item transparently with respect to the application program to produce a modified item including code which, when processed by one or more processors on the client device causes:

at the client device, measuring performance related to the service provided by the application program, and

based on a measurement resulting from said step of measuring performance, sending data indicating the measurement from the client device over the network to the server device;

sending the modified item over the network to the client process executing on the client device;

receiving the data over the network indicating the measurement; storing the data indicating the measurement in a database; and

based on the data indicating the measurement,

determining whether the data indicates performance has fallen below a threshold, and

if the data indicates performance has fallen below the threshold, then

sending a notification message.

84. (CANCELED)

85. (CURRENTLY AMENDED) A computer-readable storage medium for responding to client-side performance on a network connecting a client device executing a client process to a server device configured to execute an application program to provide a service, the computer-readable storage medium carrying instructions which, when processed by one or more processors, cause:

the application program processing a request from a client process and generating an item in response thereto that is to be sent to the client process;

intercepting the an item produced by the application program prior to arrival of the item at the client process;

determining a percentage of total items sent to the client process that are to be modified;

determining, based upon the percentage of total items sent to the client process that are to be modified, whether the intercepted item is to be modified; and

if, based upon the percentage of total items sent to the client process that are to be modified, the intercepted item is to be modified, then

modifying the intercepted item transparently with respect to the application program to produce a modified item including code which, when processed by one or more processors on the client device causes:

at the client device, measuring performance related to the service provided by the application program, and

based on a measurement resulting from said step of measuring performance, sending data indicating the measurement from the client device over the network to the server device;

sending the modified item over the network to the client process executing on the client device;

receiving the data over the network indicating the measurement;

storing the data indicating the measurement in a database; and

based on the data indicating the measurement,

determining whether the data indicates performance has fallen below a threshold, and

if the data indicates performance has fallen below the threshold, then sending a notification message.